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THE AGRICULTURAL SITUATION

JULY 1939

A Brief Summary of Economic Conditions

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FIFTY-TWO MILLION PIGS were produced this spring. Marketings of hogs will decline seasonally this summer, then increase. Meanwhile, a new corn crop is being made. * * * The supply of all feed grains for fall and winter feeding will be in better balance with the increased number of grain-consuming animals on farms this season than last. * * * The winter wheat harvest is well under way, but it is much smaller than in 1938. Production of winter and spring wheat will about equal domestic requirements this year. This points to a reduction in the carry-over next season. * * * Prices of most farm products are lower this summer than last, but farmers' cash income in the first 5 months of 1939 was 47 million dollars more than in the like period of 1938. Government payments to farmers cooperating in conservation programs have more than offset the reduced income from marketings. * * * In late June, signing of a cotton-rubber exchange agreement between the United States and Great Britain was announced.

Commodity Reviews

DEMAND: Improvement

SOME improvement in industrial activity and consumer incomes apparently is under way. No marked changes are expected, but the general business situation and demand for farm products probably will improve moderately during the remainder of 1939.

Conditions in various industries—coal, steel, building, automobiles—lend support to these conclusions. But partly offsetting the favorable factors, there may be a slackening in some textile lines and a greater-than-seasonal decline in automobile assembly operations prior to the introduction of new models this fall.

Some recovery in industrial production during the summer and early fall from the level of April and May seems probable. The Federal Reserve index of industrial production in May was 92 percent of the 1923–25 average, the same as in April, but 6 points lower than the figure for March. Weekly figures indicate that production in June was considerably larger than in May.

Continuation of the improvement in industrial conditions into late fall and winter will depend partly upon the extent to which commodity prices respond to the generally improved outlook. In late May and early June commodity prices showed a strengthening tendency, despite the continued absence of forward or speculative buying.—P. R.

INCOME: Increase

Farm income is expected to total about the same this summer as last. There is a possibility that income from products that move directly into consumption may increase slightly more than usual during the summer months, especially if there is an increase in industrial activity and in consumer incomes. Government

payments to farmers will be larger this summer.

Income in the first 5 months of this year (marketings plus Government payments) totaled 2,829 million dollars compared with 2,782 million in the like period of 1938. Larger income has been received from marketings of grains, vegetables, meat animals, and chickens and eggs as a group. Smaller income was received from cotton and cottonseed, fruits, tobacco, and dairy products.

Total from marketings was smaller in the first 5 months of this year (this is shown in the accompanying table), but the difference was more than offset by increased Government payments. In May (last month of record) income from both marketings and Government payments was larger than in May last year.

Besides the increase in dollar income this year there has been a small rise in purchasing power. Prices paid by farmers for commodities used in production and living have been slightly lower this year than last. May cash income with comparisons and cumulative totals, January–May, are shown in the following table:

	Income from marketings	From Govern- ment payments	Total
May:			
1939.....	\$508,000,000	\$81,000,000	\$589,000,000
1938.....	510,000,000	44,000,000	554,000,000
1937.....	577,000,000	33,000,000	610,000,000
January- May:			
1939.....	2,466,000,000	383,000,000	2,829,000,000
1938.....	2,570,000,000	212,000,000	2,782,000,000
1937.....	2,895,000,000	302,000,000	3,197,000,000

PRICES: Lower

The index of prices of farm products declined slightly in June, principally on lower prices of meat animals. Meat animals as a group dropped 5 points. Chickens and eggs as a group were down 2. Most of the other commodity groups advanced,

notably fruits, up 8 points. Fruits, truck crops, and cotton and cottonseed were higher than on June 15 last year.

The index of prices received was 89 for June, compared with 90 for May, and with 92 in June last year. Prices paid by farmers increased 1 point to 121. This compared with 124 in June a year ago. The buying power of farm products was the same this June as last—74 percent of pre-war.

Index Numbers of Prices Received and Paid by Farmers

[1910-14=100]

Year and month	Prices received	Prices paid	Buying power of farm products ¹
1938			
June.....	92	124	74
July.....	95	123	77
August.....	92	122	75
September.....	95	121	79
October.....	95	121	79
November.....	94	121	78
December.....	96	120	80
1939			
January.....	94	120	78
February.....	92	120	77
March.....	91	120	76
April.....	89	120	74
May.....	90	120	75
June.....	89	121	74

¹ Ratio of prices received to prices paid.

EMPLOYMENT: Increase

Farmers in most sections of the country had more hired hands on their pay roll this June than last. Total was 2,929,000 hired workers compared with 2,821,000 on June 1, 1938. Heaviest employment was in the South Atlantic States; lightest in the New England region.

The number of farm family workers was a little smaller—9,443,000 this June 1, compared with 9,484,000 a year earlier. Largest numbers of family workers were in the South Atlantic and South Central States.

PRODUCTION: Activity

The agricultural map shows plantings completed in New England, early vegetable harvest at its peak in the Middle Atlantic States, Georgia watermelons and peaches moving in volume. Cotton is being picked in Texas, wheat is heading as far north as Minnesota, range conditions have been improving. Cherries are ripening in Washington, and cantaloups and potatoes are leading California's vegetable output. Ample supplies of farm products seem assured for the present.—F. M. T.

Prices of Farm Products

Estimates of average prices received by producers at local farm markets based on reports to the Bureau of Agricultural Economics. Average of reports covering the United States weighted according to relative importance of district and States.

Product	5-year average, August 1909-July 1914	June average, 1910-14	June 1938	May 1939	June 1939	Parity price June 1939
Cotton, lb.....	12.4	12.7	18.12	8.48	8.67	15.7
Corn, bu.....	64.2	68.4	52.3	48.3	49.9	81.5
Wheat, bu.....	88.4	89.0	69.7	63.0	62.5	112.3
Hay, ton.....	11.87	12.16	7.48	6.68	6.63	15.07
Potatoes, bu.....	69.7	71.8	161.2	65.6	61.0	86.5
Oats, bu.....	39.9	41.8	25.3	29.5	29.9	59.7
Peanut, bu.....	(9)	(9)	.86	.87	.83	-----
Soybeans, lb.....	4.8	5.2	3.49	3.42	3.43	6.1
Beef cattle, cwt.....	5.21	5.44	6.38	7.09	6.81	6.62
Hogs, cwt.....	7.22	7.16	8.00	6.39	5.96	9.17
Chickens, lb.....	11.4	11.9	15.7	13.9	13.4	14.5
Eggs, doz.....	21.5	16.7	18.2	15.2	14.9	20.3
Butterfat, lb.....	26.3	23.4	23.7	21.5	22.2	31.1
Wool, lb.....	18.3	17.5	18.0	21.0	21.9	23.2
Veal calves, cwt.....	6.75	6.77	7.73	8.26	7.98	8.57
Lambs, cwt.....	5.87	6.30	6.84	8.02	7.49	7.45
Horses, each.....	136.60	138.90	86.30	82.50	81.30	173.50

¹ Revised.

² Prices not available.

³ Adjusted for seasonality.

COTTON: Prices Up

Cotton was selling in spot markets in late June about $\frac{3}{4}$ cent a pound higher than at the same time last year—basis Middling $\frac{7}{8}$ inch. United States exports continue to decline, but domestic mill activity has held up well, and the supply of "free" cotton has been reduced.

Cotton mill activity in Great Britain and on the Continent of Europe has increased in recent months. Stocks of American cotton at European ports in mid-June were only about one-third the stocks at the same time last year. United States exports have been lagging behind consumption of American cotton in foreign countries.

In the United States, the volume of sales of finished goods—textile and nontextile—in wholesale and retail markets has been well maintained at levels higher than at the same time last year. There was a sharp rise in general industrial activity in June.

Headlining the news on cotton in late June was congressional approval of funds which can be used for subsidizing exports of American cotton, and a cotton-rubber exchange agreement between the United States and Great Britain.

WHEAT: New Harvest

Another wheat harvest is under way, but the domestic crop is much smaller this year. Prospects are that the winter and spring crops combined will just about equal average domestic requirements. This means that exports during the year beginning July 1 must come out of the carry-over stocks. The July 1 carry-over has been estimated at about 265 million bushels.

Domestic prices continue to hold above world prices. It is possible that this spread may average wider this season than last, as a result of the smaller prospective domestic wheat supplies, the higher Federal loan rate on wheat, and continuation of the export-aid program.

World production of wheat may be smaller this year, due largely to the

acreage reduction in the United States and to smaller yields per acre in Europe. Increases are expected in Canada and North Africa. The 1938 world crop was 4.6 billion bushels. Production this year may be about 600 million bushels less.

But the world carry-over of wheat this July 1 is about double the 1938 figure. The carry-over on July 1 last was about 600 million bushels. The expected reduction in production and the increase in the carry-over are practically a stand-off.

About 54 percent of the July 1 carry-over is held by the 4 major exporting countries, approximately as follows: United States, 22 percent; Argentina, 17 percent; Canada, 11 percent; Australia, 4 percent. Of the 265 million bushels carry-over in the United States, about 200 million consist of hard red winter and hard red spring wheats.

FEED GRAINS: Smaller

A smaller supply of the principal feed grains this season than last was indicated by June conditions. Much depends upon the crops of corn and grain sorghums, meanwhile smaller supplies of barley and oats have been indicated.

Last year the supply of feed per grain-consuming animal on farms was the largest in more than 12 years. This year the supply will be closer to the pre-drought average.

Little information is available regarding prospective supplies of high protein and byproduct feeds. Farmers reported intentions to increase acreages of soybeans and flaxseed this season. Production of soybean cake and meal last year was the largest on Government record—approximately 800 thousand tons.

BEEF CATTLE: Marketings Up

Marketings of grain-fed cattle are expected to increase in the next few months. Likely, they will continue larger than a year earlier through the

remainder of 1939. Prices of all cattle have declined in recent months, are higher than at this time last year.

Despite seasonal increases in marketings, prices of grain-fed cattle frequently advance in the summer and early fall, apparently as a result of a strong seasonal demand for such cattle at this time of year. An additional factor this fall is the prospect for improved consumer demand for meats.

Deficient rainfall this summer would probably check the rebuilding of herds, and increase the marketings of cows and heifers. The season was unusually dry through May, but good rains came in June. Even under normal conditions, marketings of slaughter cows and of lower grade steers increase seasonally in summer and early fall, and prices decline.

A combination of conditions—relatively high prices, drought in parts of northern Mexico, and unsettled economic conditions generally in Mexico—resulted in the first 4 months of this year in the largest United States imports of Mexican cattle on Government record—some 306,000 head. Imports from Canada totaled 95,000 head, or about the same as in 1937.

Cattle in western range States generally were reported in "good flesh" in June, due mainly to their good condition at the end of the winter and to ample supplies of dry feeds. Losses of cattle and calves since the first of the year have been relatively small. The calf crop was reported as "good" in most areas.

A continued tendency to restock herds was reported from the range States. Limiting factors are the high prices of breeding cattle and uncertainties as to feed prospects in some areas.

HOGS: Near Record

Some seasonal reduction in hog marketings is expected during the next few months. But the seasonal increase in marketings from late summer through fall probably will be relatively large. Marketings will re-

flect the large increase in the 1939 spring pig crop.

BAE has reported the production of 52.3 million pigs this spring. This compares with 43.4 million pigs in the spring of 1938. The largest in 16 years of Government record was 54.5 million in the spring of 1927. Of the total this spring approximately 32.1 million pigs were produced in the Corn Belt, compared with 31.4 million in 1938, and with the high record of 44.2 million in the spring of 1931.

Farmers the country over also reported a 16 percent increase in sows bred or to be bred for farrow this fall compared with last. Unless dry weather compels the marketing of bred sows this summer, the 1939 pig crop—spring and fall combined—will total about 83 million head. This compares with 71 million in 1938, and with the high record of 84 million in 1933.

Prices of hogs in June were the lowest in more than 4 years. BAE says that "consumer demand for hog products may improve moderately or at least hold near present levels during the remainder of 1939," but that "the ratio of hog prices to corn prices may not be so favorable for expanding hog production as it has been in the past year and a half."

LAMBS: Reduction

Smaller slaughter supplies of lambs this summer compared with last are indicated by current conditions. Lambs will be of poorer quality and finish. A relatively large proportion of the western lambs will be in feeder flesh. The supply of slaughter lambs this summer will include a relatively large number of fed lambs from the early lamb crop that were not suitable for slaughter when they were marketed in the spring.

BAE will issue on July 27 an official estimate of the 1939 lamb crop. Weather and feed conditions have been less favorable for lambs this year than last. Fewer lambs per 100 ewes (1 year old and over on January 1) prob-

ably were saved. This offsets in part the increase in number of breeding ewes. The number of stock sheep on farms last January 1 was 3 percent larger than a year earlier.

WOOL: Outlook

The outlook for disposal of the 1939 domestic wool clip continues favorable. Prospects are for a fairly high level of domestic mill consumption in the next few months, although probably not so high as in the first quarter of this year.

The trend of consumption in the late fall and winter will depend partly upon changes in business conditions in the second half of the year. The steady demand for wool in foreign markets and relatively small supplies in Southern Hemisphere countries should be strengthening factors in the domestic wool situation, at least until the new Southern Hemisphere clip becomes available in the fall.

In the early months of this year the spread between domestic and foreign wool prices was wide enough to attract fairly large imports to the United States. Imports of apparel wool for consumption from January through April totaled 27 million pounds compared with only 5 million pounds imported a year earlier. Imports are likely to decline in the next few months.

FATS, OILS: Low Priced

Prices of most fats have changed little since last summer. Lard—excepted—has trended downward since 1937. Lard production in 1940 may be as large as the average for the 5 pre-drought years, 1929–33.

Increasing supplies of lard have affected adversely the prices of cottonseed oil this season. Prices of cottonseed oil in the first 5 months of this year were lowest since early 1934. But prices of this oil have been relatively high compared with lard prices.

Prices of tung oil advanced sharply in recent months on restricted availability of Chinese supplies

FRUIT: Better Demand

A better demand for fruits this summer and fall than last is in prospect. Larger crops of apples, peaches, apricots, plums, and cherries, but smaller crops of pears, California grapes and dried prunes were indicated by June 1 conditions.

Early peaches, cherries, apricots, and plums were moving to market in large volume in June. Early apple shipments from the South were started. Marketings of new crop pears and grapes are under way.

A smaller supply of oranges this summer and early fall is indicated by a reduction in the California valencia crop from the bloom of 1938. Prices of oranges were substantially higher this June than last. Lemon prices were sharply higher in early June.

Prospects indicate a large supply of peaches available for market in July, August, and September, and that there will be ample supplies of California clingstone and freestone varieties for commercial canning and drying. Pears will be in smaller supply.

Negligible quantities of red pitted cherries have been carried over by cannerys, and a good demand for new crop red cherries for canning is in prospect. A favorable demand for cherries for freezing also is indicated.

The apple crop was in better condition this June than last, and it is possible the production may exceed the 160 million bushels average for 1928–37. Prospects are above average in the North Atlantic and North Central States, but below average in the South Central and Western States.

TRUCK CROPS: Smaller Supply

Acreage planted and to be planted to commercial truck crops for fresh market shipment this season is the largest on Government record. But total production will be smaller this year than last on account of unfavorable growing conditions. This was indicated by reports as of June 22.

Only crops indicating increased production this season include as-

paragus, snap beans, lettuce, peas, and spinach. Large decreases are indicated for beets, cauliflower, celery, kale, peppers, tomatoes, and watermelons.

Market prices of vegetables were generally higher in late June this year compared with last. Improvement is expected in the consumer demand for farm products this summer, but an unpredictable factor in the commercial vegetable situation is the supply produced in market garden areas. Summer marketings—just beginning—of this produce have increased greatly in recent years.

Acreage planted or to be planted to important truck crops for commercial cannery or manufacture was indicated at 1,063,000 acres by the June 22 reports. This compares with 1,352,000 acres planted in 1938. Decreases range from about 6 percent for lima beans to 35 percent for beets.

Mid-June reports indicated production of green peas for canning and freezing at 187,420 tons compared with 302,540 tons—the largest on record—last year. The 1928–37 average was 193,660 tons.

POTATOES: Reduced Supply

A smaller supply of potatoes this summer was indicated by June conditions. Production in the first and second sections of intermediate States totaled 21.7 million bushels in 1938. This summer the supply may be about 3.5 million bushels less. Economists meanwhile look for some improvement in consumer demand for farm products this summer and fall.

Production in the first section of intermediate States was indicated at 9.5 million bushels, compared with 11.9 million in 1938, and with 13.8 million as the 10-year 1928–37 average. Acreage planted in the second section of intermediate States was indicated to be slightly larger this year than last, but June 1 condition was 13 percent lower than on the same date last year. Production in this area was 9.8 million bushels in 1938. This year,

the output may be 1 million bushels smaller.

The market situation in June was featured by sharp changes in supplies and by shifts in quality and varieties available. Price trends in eastern markets were sharply downward. In midwestern cities the down trend was less pronounced. There was a sharp increase in marketings in eastern producing areas. Shipments from the intermediate States are expected to increase rapidly this month.

DAIRYING: Peak Past

The seasonal peak of milk production was reached and passed in mid-June. For 4 successive months milk production had mounted. Prices declined. On June 1 the output of milk was the largest on record for that date.

Production of manufactured dairy products has been heavy, nevertheless prices of butter and cheese have increased since early May. Factors in the rise were the threat from dry weather, some improvement in apparent consumption, and a decrease in commercial holdings of butter.

June 1 storage stocks of butter were the largest on record for that date. Total was more than 85 million pounds compared with 55 million on June 1 last year, and with 32 million June 1 average 1934–38. Of the total, commercial stocks (about 33 million pounds) were smaller this June than last, and only slightly more than the 5-year average.

Production of milk and dairy products is expected to decrease seasonally through November. Pastures have not been in such good condition this season. There has been considerable supplementary feeding of dairy stock.

The United States Supreme Court upheld on June 5 the validity of the Federal order regulating (under the Agricultural Marketing Act of 1937) the handling of milk in the New York metropolitan area. The order had been in suspension since February following an adverse decision by a lower Federal Court. AAA announced rein-

statement of the marketing order as of July 1, 1939.

AAA announced public hearings to consider the regulation of the marketing of milk in a number of other cities. Most important was the hearing on the Chicago market on June 26. The Chicago market has had two Federal milk marketing programs. The first was from August 1, 1933, to January 1, 1934; the second from January 5, 1934, to March 2, 1935.

POULTRY, EGGS: Checked?

Recent increases in prices of grain in relation to prices of eggs and chickens are tending to check the expansion of farm flocks. Nevertheless, there were 3 percent more young chickens in farm flocks this June 1 than last. This means larger laying flocks next season. Production of eggs by farm flocks was about 4 percent larger this June 1 than last.

The feed-egg ratio based on Chicago prices has been rising steadily since last March. This is in sharp contrast to the rapid decline in the ratio during the preceding 12 months, a decline which had accounted for the expansion in poultry and egg production in 1938.

Market receipts of fresh dressed poultry have increased in recent months. Receipts of eggs have been declining seasonally. The midsummer carry-over of frozen poultry will be considerably larger this season than last. Storage stocks of shell and frozen eggs may be 5 percent larger this August than last.

Poultry marketings during the remaining months of 1939 are expected to continue larger than in 1938 because of the larger number of hens on farms and the increased hatch of both poults and chicks.

EXPORTS, IMPORTS: Increase

Exports and imports of a number of leading agricultural products—cotton exports excepted—were larger this May than last. Some were larger in the first 5 months of this year compared with the like period of 1938—notably exports of pork, lard, wheat, and apples, and imports of cattle, canned beef, hides, flaxseed, tobacco, and wool. Reductions for the 5 months are shown on exports of pears, tobacco, and cotton, and on imports of barley malt and sugar.

FRANK GEORGE.

United States: Exports and Imports of Specified Agricultural Commodities, January-May, Average 1924-29, Annual 1938 and 1939, and May 1938 and 1939

Commodity	Unit	January-May			May	
		Average 1924-29	1938	1939	1938	1939
Exports:		<i>Thou-</i> <i>sands</i>	<i>Thou-</i> <i>sands</i>	<i>Thou-</i> <i>sands</i>	<i>Thou-</i> <i>sands</i>	<i>Thou-</i> <i>sands</i>
Pork ¹	Lb.....	203, 016	38, 295	47, 300	9, 370	11, 687
Lard, including neutral.....	Lb.....	360, 245	88, 633	117, 996	20, 340	25, 303
Wheat, including flour.....	Bu.....	51, 489	53, 071	59, 610	13, 246	14, 489
Apples, fresh ²	Bu.....	5, 341	5, 472	5, 849	538	396
Pears, fresh.....	Lb.....	4, 819	15, 711	9, 735	299	300
Tobacco, leaf.....	Lb.....	204, 352	158, 401	140, 887	20, 146	22, 400
Cotton, excluding linters (500 lb.).....	Bale.....	3, 124	2, 168	1, 264	205	149
Imports: ³						
Cattle.....	No.....	127	229	464	49	63
Beef, canned, including corned.....	Lb.....	⁴ 14, 755	30, 852	33, 117	9, 763	11, 281
Hides and skins.....	Lb.....	⁵ 173, 800	50, 513	141, 533	11, 225	26, 805
Barley malt.....	Lb.....	⁶ 378	45, 746	43, 988	8, 230	12, 649
Sugar, excluding beet (2,000 lb.).....	Ton.....	2, 161	1, 331	888	265	206
Flaxseed.....	Bu.....	9, 601	6, 619	8, 962	876	1, 155
Tobacco, leaf.....	Lb.....	33, 480	21, 754	24, 858	3, 458	6, 514
Wool, excluding free in bond.....	Lb.....	⁶ 92, 805	7, 783	35, 441	1, 394	7, 327

¹ Includes fresh, canned, and pickled pork; bacon, hams and shoulders, and sides.

² Includes barrels, baskets, and boxes in terms of bushels.

³ General imports prior to 1938. Subsequently imports for consumption.

⁴ Includes a small amount of "meats canned, other than beef."

⁵ Includes reptile and fish skins.

⁶ Imports for consumption.

Why Farmers' Prices Are Below Pre-War

IN JUNE 1939 the index of prices received by farmers was 89. This means that the average price of a group of representative farm products in June was 11 percent lower than during the pre-war years August 1909-July 1914. Except for the period September 1934 to January 1938, when supplies of many farm products were sharply reduced by 2 years of severe drought, prices of farm products have been below pre-war every month since January 1931.

When we examine the prices of the different commodities which go to make up the general index, however, we find great differences in present prices relative to pre-war. Grains and cotton make the poorest showing of any of the major groups of commodities, both averaging only 73 percent of pre-war. Prices of meat animals, on the other hand, are 7 percent above pre-war, and prices of truck crops are 5 percent higher. The latter two groups are the only ones which are above pre-war, but dairy products are only 6 percent lower. Fruits are down 7 percent, chickens and eggs are down 17 percent, and miscellaneous products are down about 19 percent.

THERE are many reasons why the average of price of all farm products is lower than pre-war, and why some groups have been hit much harder than others. An explanation of why the prices of such a comprehensive group of products rise or fall over a period of years is in considerable part an explanation of why prices in general change as they do. The explanation would have to include monetary and other factors affecting the general price level, changes in population, industrial activity and consumer purchasing power in the United States, changes in international trade and foreign demand conditions, and

changes in both the domestic and foreign supplies of farm products. Every one of these conditions has contributed importantly to the determination of the present level of farm product prices compared with the level which prevailed before the World War. It is possible, however, to pick out a few outstanding developments which have occurred since the pre-war period which help greatly to explain the changes in prices received by farmers.

Two important changes since pre-war in conditions affecting prices of farm products may be noted. In the first place, the foreign demand for a number of important commodities, particularly grains and cotton, has been reduced. We can now sell a smaller quantity of these commodities abroad at any given price, or we can obtain only a lower price for a given quantity. This condition results from a multiplicity of conditions affecting international trade. One is that the United States has changed from a debtor to a creditor nation, yet hesitates to accept imports of industrial goods with which foreigners can make payments on their debts owed to us and at the same time pay for agricultural commodities imported from the United States. Thus, we might say that one reason prices of farm products are lower than pre-war is that we have not learned that international trade necessitates a two-way flow of goods. Increases in foreign production also have contributed greatly to the decrease in the demand for our exports of farm products.

BUT a number of important farm products are consumed almost entirely in the domestic market. The total purchasing power of the entire population of the United States now is greater than before the war. Prices of those products sold entirely in the

domestic market might be expected to be higher than pre-war, both absolutely and compared with prices of products which depend in considerable measure upon foreign markets. We have seen that prices of livestock actually are higher than pre-war, but this in part reflects a more or less temporary situation arising from the effects of the drought on livestock production.

There are two main reasons why prices of these domestically consumed products are not as high as one might be led to expect by comparing domestic demand conditions before the war and now. In the first place, farmers are able to shift from the production of one commodity to another sufficiently to keep prices of the different alternative products from becoming very far out of line with one another over a long

period of years. If prices of livestock become relatively very high, farmers tend to increase the production of corn and livestock which in turn tends to bring prices back into line. Thus, adverse changes in foreign demand affect also the prices of domestically consumed products. And in the second place, although consumers in this country are able to and do pay considerably more for farm products than before the war, they demand more services in connection with the processing and handling of the commodities. This, together with higher wage rates and other middlemen's costs, has considerably increased the total handling charges involved in marketing farm products. The farmer gets what is left.

F. L. THOMSEN.

A Plan for Cotton-Crop Insurance

COTTON, the Nation's largest cash crop, is subject to many production hazards, a fact often overlooked because of the frequent accumulation of large carry-over stocks. Indeed, crop reporters indicate that cotton-crop losses from natural hazards are often greater than losses on any other major crop. Crop failures occur practically every year in one part or another of the Cotton Belt. They are usually offset by good crops in other parts, however, so that national or State production and yield figures do not reflect the extent of the crop losses.

Actual losses are revealed only by study of yields on individual farms. Out of a sample of 75 farms selected at random in a west Texas county, 28 had yields in 1933 that were below three-fourths of their 5-year average; 74 in 1934; 14 in 1935; 16 in 1936; and 1 in 1937. In a typical South Carolina county, 54 farms out of a sample of 66 had yields below three-fourths of their 5-year average in 1933; 1 in 1934; 5 in 1935; 3 in 1936; and 10 in 1937.

FEDERAL crop insurance was made available to wheat growers for the first time on the wheat crop to be harvested in 1939. Provision was also made in the Federal Crop Insurance Act for research on other crops to determine the feasibility of extending crop insurance benefits to them. Research conducted in the Bureau of Agricultural Economics during the past year has led to the development of a plan that might be used for insuring cotton crops.¹ Basic features of the plan suggested are similar to the wheat insurance program of the Federal Crop Insurance Corporation.

The proposed plan for cotton-crop insurance, like the wheat insurance program, would offer the cotton farmer protection against losses in yield due to unavoidable causes such as drought, flood, hail, storm, excessive or deficient moisture, insect damage, and plant diseases. It would not cover

¹ Published as H. Doc. No. 277, 76th Cong., 1st sess. Copies may be obtained from this Bureau.

losses due to negligence of the producer, failure properly to care for or harvest the crop, damage to quality, or loss by theft. Following the precedent established in the Federal wheat crop insurance program, the plan that is suggested provides for yield insurance. The insured farmer would be indemnified for the amount by which the yield fell below 75 percent of the average yield for the farm. A 50-percent option would be available also at a lower premium rate.

THE principle of insurance "in kind" would be used to avoid insuring price as well as yield. Both premiums and indemnities would be determined in lint cotton but would be payable either in cotton or in the cash equivalent. Premiums received in cash would be invested in cotton, and reserves accumulated out of premiums would be carried in cotton. Claims for losses could be paid by issuing warehouse receipts for cotton, or by selling cotton from the reserve and delivering cash.

The commodity reserve would be sold only to pay losses or for convenience in handling (in which event it would be replaced), and would not be used to pay indemnities for losses on other insured crops. Cash premiums would be invested in cotton because obligations for settlement of losses would be in cotton, and a rise in price during the period between collection of premiums and payment of losses might make premiums carried in cash inadequate to meet losses.

The amount of insurance per acre would be based on either 75 or 50 percent of the average yield of lint cotton per acre on the insured farm during a representative period. For this insurance protection a cotton farmer who took insurance would pay a premium based half on the crop-loss experience of his farm and half on the crop-loss experience for the county as reflected by actuarial studies of sample farms in the county. Consequently, the premium rate for a farm will reflect not only the risks that are related

primarily to the farm but the risks that are as likely to affect one farm as another, such as storms or drought. Minimum premium rates would be established under both the 75 and 50 percent plans. Research work is now being carried on to determine county average loss experience figures for each county in which cotton is grown.

PREMIUM rates determined on the basis of average loss experience during a representative period of years will result in premium collections more than adequate to meet losses in some years and less than adequate in others. Consequently, capital or a commodity reserve should be established for the inauguration of a cotton-insurance program adequate to absorb the fluctuation from year to year in loss settlements. It has been estimated that if three-fourths of the cotton acreage were insured under the 75-percent plan, a reserve of about one-and-a-half million bales would be needed.

The research work has centered around actuarial studies, for it is believed that the development of factual information is the first step. It is only when the facts are available that sound plans can be developed. Individual farm yield data for the 6 years 1933-38 inclusive are being obtained from Agricultural Adjustment Administration records for sample farms in every county. Actuarial studies include analyses of these data to determine the amount of loss that would have been sustained had a crop insurance program been in effect during those years.

The experience during these years, however, is probably not long enough to furnish a representative basis for insurance. Consequently, an adjustment to the 6-year yield and loss cost figures is necessary in order to reflect the experience for a longer period, probably the 11-year period 1928-38. The procedure for determining for a farm the coverage and premium rate in which the 11-year experience will be reflected is shown in the following table.

Computation of Coverage and Premium for a Farm in Coahoma County, Mississippi

Year	Yield per planted acre	75 per- cent of average yield for base period	Annual loss cost per acre
	<i>Lbs. lint</i>	<i>Lbs. lint</i>	<i>Lbs. lint</i>
1933-----	216	256	40
1934-----	260	256	0
1935-----	233	256	23
1936-----	316	256	0
1937-----	669	256	0
1938-----	354	256	0
Total-----	2, 048	XX	63
Average for 6-year base period-----	341	XX	10. 5
Adjustments to 11-year basis-----	-54	XX	+2. 7
Adjusted average-----	287	XX	13. 2

Total insured production per acre: 75 percent of
287 pounds=215 pounds.

Premium per acre for farm:

	<i>Pounds</i>
Adjusted average loss cost for farm--	13. 2
Adjusted average loss cost for county--	11. 6

Total----- 24. 8
Premium per acre (total divided by 2)----- 12. 4

YIELD figures shown in the table are actual yields for the years 1933-38, inclusive. From the 6-year average yield of 341 pounds for this farm would be subtracted 54 pounds because the average county yield for the 11 years 1928-38 was 54 pounds lower than the average county yield for the 6 years. Consequently, the adjusted average yield for this farm would be 287 pounds, and the coverage per acre under the 75 percent plan would be three-fourths of 287 pounds, or 215 pounds.

To adjust the loss cost to the 11-year basis, 2.7 pounds would be added to the 6-year average loss cost for the farm, because actuarial studies indicate that the loss experience for the county for the 11 years was 2.7 pounds per acre more than the 6-year loss experience for the county. The premium rate per acre for this farm would be 12.4 pounds, or the average of 11-year loss cost for the farm and for the county, respectively.

PRELIMINARY actuarial computations indicate that county average premium rates for insurance protection up to 75 percent of the average yield

will be as low as 5 pounds of lint cotton per acre in the low risk areas and as high as 25 pounds per acre in areas where the risks are great. The average premium rate for counties in Georgia and South Carolina in which special studies have been made was about 8 pounds per acre. At 9-cent cotton, this means that on the average this all-risk insurance would cost farmers in those States about 75 cents per acre. Premium rates reflect the amount of risk involved, and will be higher in areas where floods, drought, storms, and other hazards cause larger and more frequent crop losses.

INSURANCE against loss of lint cotton yields would provide only about four-fifths of full protection against cotton-crop losses because of the additional loss of cottonseed. Insurance of seed cotton yields would provide adequate protection, but this is not feasible, principally because seed cotton yield data are not available for actuarial purposes. As an approach to insuring seed cotton yields, it has been recommended in the proposed plan that all premiums and indemnities for loss that are determined in lint be increased by a percentage which on the average reflects the proportion that cottonseed represents of the lint cotton returns.

By use of the average relationship during the years 1928-38, inclusive, the premium rate for the farm in the table would be increased about 20 percent, and any indemnity for lint loss occurring under the policy would be increased by the same percent. This provision would offer protection against losses of cottonseed as well as lint losses by the use of actuarial data which are available only in terms of lint.

COORDINATION of a crop-insurance program for cotton with other farm programs administered by the Department of Agriculture would promote effective and economical administration. The State and county committees of farmers already estab-

lished by the Department and trained in administering other farm programs would be available for administering a crop-insurance program for cotton.

The provision now applicable in wheat-crop insurance whereby farmers may pay their insurance premiums by having the Secretary of Agriculture advance to the Federal Crop Insurance Corporation a portion of the payments due them, or which they can earn by participating in the Agricultural Conservation Program, would increase the

number of farmers who could conveniently pay their insurance. It would also increase participation in the program and reduce the cost of collecting premiums.

Furthermore, the total insurance protection on a farm might well be limited to the amount of insurance that would be available on the cotton-acreage allotment assigned to that farm by the Agricultural Adjustment Administration.

R. T. BAGGETT.

A World of Citrus

WORLD production of citrus fruits has expanded more than any other agricultural commodity in the last 20 years. Production from the bloom of 1938 will probably total close to 260 million boxes, of which 128 million will be in the United States. World production 20 years ago—in 1919—totaled 98 million boxes, of which 35 million was in the United States.

The figures include the production of oranges (including madarins and tangerines), lemons, and grapefruit—in all important producing countries except Egypt and China, for which countries no reliable information is available. Indications are that production will continue to increase sharply during the next 10 years unless the standing groves suffer some unusual weather or disease damage. There are many groves not yet in fruit.

MOST striking has been the expansion in world production of oranges—principally in the United States, Brazil, Palestine, Japan and the Union of South Africa. Production in Spain has declined in recent years. The world total for oranges from the bloom of 1937 was 185 million boxes, of which more than 74 million was in the United States. Production from the 1938 bloom in the

United States has been indicated at more than 76 million boxes.

Twenty years ago the world output of oranges was less than 75 million boxes, of which the United States produced about one-third. Spain also produced about one-third of the total, and Japan, Italy, and Brazil grew most of the remainder. The largest increase in volume during the 20-year period has been in the United States—the increase totaling more than 50 million boxes. Outside the United States, the largest gain has been in Brazil—from about 2 million boxes to more than 33 million.

THE United States always has led the world in production of grapefruit. Production from the 1938 bloom has been indicated at about 41 million boxes as compared with 31 million in 1937 out of a world total of about 35 million in that year. Twenty years ago, the United States produced 6 million boxes. Second leading country is Palestine, where production has increased sharply in recent years, but where the total for 1937 was less than 2 million boxes.

The United States now leads the world in production of lemons, the production from the 1938 bloom having been indicated at nearly 11 million boxes, which will probably be more

than half the world total. Twenty years ago, the United States produced only 4 million boxes. Then, the leading producing country was Italy, growing approximately 10 million boxes of lemons a year. Of the world total of 21 million boxes from the bloom of 1937, the United States produced more than 9 million, and Italy slightly more than 8 million.

BECAUSE of the decline in citrus prices, exports from the United States have increased somewhat in recent years. But the increase in exports has not equaled the increase in production, and in consequence larger quantities have been available for domestic consumption. Domestic consumption increased sharply during the last 20 years, due in part to an increase in domestic demand occasioned by a sharp expansion in consumer purchasing power, and in part to declining citrus prices accompanying expanding production.

Domestic demand increased sharply during the 1920's, declined during the early 1930's, but in the last 5 years has regained part of this loss. Adverse factors affecting the foreign demand for United States oranges and grapefruit have been the trade restrictions and the increasing competition from foreign-grown citrus. Foreign demand for United States lemons, however, has increased somewhat.

EXPORTS of oranges from Spain, Palestine and Brazil have exceeded those from the United States in recent years; exports of grapefruit

from Palestine have been larger than the shipments from the United States; exports of lemons from Italy and Spain have exceeded exports from the United States. For most of these foreign countries, the export market has provided an important outlet for citrus crops.

Because of the prospective continued expansion of production of oranges and grapefruit in Palestine and the Union of South Africa, it is likely that exports from these areas will increase sharply in the next few years. Exports of oranges from Spain declined during the period of civil war, but no information is available as to the trend in the immediate future.

THE United Kingdom is by far the leading importer of citrus fruits, although Germany, France, Canada, the Netherlands, and Belgium are important. These 6 countries usually take about 90 percent of the total citrus exported. In recent years an increasing proportion of total citrus imports into the United Kingdom has come from Empire sources, particularly from Palestine and the Union of South Africa. Total imports of citrus into Germany have declined sharply in recent years, even though the imports of several classes from Italy have increased.

Canada is the principal outlet for United States citrus fruits, and is becoming more important since in recent years the exports from the United States to the United Kingdom have tended to decline.

GUSTAVE BURMEISTER.

Greater Uses For Dairy Byproducts

OF THE 106 billion pounds of milk produced in the United States in 1937 (110 billion was produced in 1938), more than 90 billion pounds was required to supply the whole milk and cream for the market milk, ice cream,

and butter industries. However, these industries actually put less than half of this weight into finished products. This left more than 53 billion pounds of skim milk and nearly 2 billion pounds of buttermilk to be dis-

posed of in other ways. The manufacture of cheese and casein left 8 billion pounds of whey. Thus, 60 percent of the weight of all the milk produced appeared later as byproducts of the dairy industry.

Approximately 10 billion pounds of skim milk was used in making casein, condensed skim milk, skim milk powder, cultured milk, chocolate milk, and skim milk cheese. This left 43 billion pounds (containing 1 billion pounds of protein and 2 billion pounds of milk sugar—both wholesome and nutritious foods) for which there was no better use than to feed it to farm animals, which convert it to other food solids in the wasteful ratio of about 10 to 1.

Of the cheese whey, 1 billion pounds was converted to whey powder for animal feeding. Some of the remaining 5 billion pounds was fed to animals. A great part was run to waste. Of the 2 billion pounds of casein whey, about one-tenth was used in making milk sugar and lactic acid, most of the remainder going to waste and carrying with it 90 million pounds of milk sugar in solution.

HOW increase and make more efficient the utilization of dairy byproducts?

The 1 billion pounds of protein and 2 billion pounds of milk sugar in the skim milk fed to farm animals have remarkable food value, for people as well as livestock. It seems logical that these valuable constituents should be utilized directly as human food. There is a trend in this direction, but it is slow and difficult to increase. Ice cream manufacturers and bakers use considerable quantities of skim milk in the condensed and powdered forms. It is to them, particularly the bakers, that we must look for increase in the consumption of skim milk in food.

The use of milk powder in bread practically pays for itself, by increasing the number of loaves made from a given quantity of flour. The improvement in appearance, flavor, and

nutritional value of the bread resulting from the use of milk powder makes considerable appeal to customers and admittedly increases sales. This use of milk powder is expanding. It would expand more rapidly if some of the difficulties of combining milk powder and certain flours were better understood.

CASEIN, made from skim milk, has a definite place in industry and there is possibility of greatly expanded use. Approximately three-fourths of the 40 million pounds produced annually is used in the coating of high-grade book papers. Many attempts have been made to use cheaper materials as substitutes, but none has been found as satisfactory as casein for this purpose. Other important uses of casein are in glues, casein plastics, and casein paints.

Casein is at a great disadvantage in the plastic field because casein plastics are produced only by the extrusion process. This process not only greatly limits the use of casein in plastic manufacture. It requires an awkwardly long time for hardening in formaldehyde. The recent development of a process for molding protein plastics offers little promise of increasing the use of casein, since the cheaper soybean protein can be used with apparently equally satisfactory results.

Casein paints have been greatly improved in recent years. Their sale is increasing here and abroad. For this purpose, use can be made of buttermilk casein, which lacks the properties necessary for competition with skim-milk casein for other uses.

The transparent casein film that was marketed for a time several years ago will probably be available again soon in an improved form for wrapping purposes. How much casein this may require in the next few years can only be a guess.

A NEW USE of casein that has aroused the interest of both textile and dairy people in Europe and America is in the production of a tex-

tile fiber similar in properties to wool. This may increase greatly the industrial demand for casein in the near future.

The high cost of wool compared to other textile fibers has induced a search for cheap substitutes, either to replace wool or to be woven with wool to increase its use among low-income groups. Rayon, kinked and cut into staple lengths, is being woven with wool here and abroad. However, this kinked rayon is not satisfactory for this purpose. The kink is not permanent and rayon does not take wool dyes. A fiber composed of protein overcomes these objections to rayon.

Casein fiber has been made in Italy for 3 years. More than 6 million pounds were produced in 1938. None is as yet being manufactured in this country, but it is reported that two plants will soon be in operation. The 1 billion pounds of casein potentially available annually in this country could be converted into 1 billion pounds of casein fiber, which is nearly three times our annual consumption of wool.

UNTIL recent years, milk sugar was practically the only product manufactured from whey. Milk sugar has nutritional and therapeutic properties that recommend it above other sugars, but its relatively slight degree of sweetness and its high cost have prevented its general use as a food. Our domestic consumption of milk sugar appears to be stable at about 4 million pounds per year.

Research is under way having as its object the greater use of whey in foods such as candies, soups, and whipped products. Some progress has been made in the development of processes for using condensed whey and whey powder in these products.

Lactoflavin, of which whey is an excellent source, has become of great interest lately to feed manufacturers, some of whom are selling feeds on the basis of lactoflavin content. This interest accounts for the increase in the quantity of whey powder produced, from 25 million pounds in 1935 to 67 million in 1937. A process developed in the Bureau of Dairy Industry separates whey powder into a lactoflavin concentrate, soluble protein, and milk sugar. It is too early to predict to what extent this process will be used industrially, but, at least, it offers a practical means of obtaining simultaneously three products of commercial promise.

WHEY, because of its cheapness, is a practical starting material for the production of lactic acid by a process that converts the milk sugar, nearly pound for pound, into this acid. One factory in the United States has been producing lactic acid from whey for several years. Expansion of this means of utilizing whey depends on the increase in the use of lactic acid. Tanners and producers of acid beverages and sherbets use most of the lactic acid now being produced. Several hundred thousand pounds of lactic acid are used annually in cast phenolic resins. Conversion of lactic acid into resins and into methyl acrylate offers promising avenues for greater industrial use.

Both whey and skim milk are capable of utilization in many ways—in foods and in feeds, and by conversion into industrial products. It is not to be expected that wider and more efficient use of these byproducts will greatly increase the dairy farmer's income, but it is safe to assume that a greater stabilization of prices and income will result.

E. O. WHITTIER,
Bureau of Dairy Industry.

Farmers had a gross farm income of 9.2 billion dollars in 1938 compared with 10.4 billion in 1937—BAE. Total in 1936 was 9.7 billion. The low for the 1925-38 period was 5.6 billion in 1932.

Livestock Estimates—An Appraisal

THE livestock reports of the Department of Agriculture include inventory numbers and values of different kinds and classes of livestock on farms January 1 each year, estimates of annual production of different kinds of livestock, and estimates of quantities of livestock products such as milk, eggs, and wool produced each year. Estimates are made in December and June of the spring and fall pig crops, of the size of the lamb crop in July, of the number of lambs and cattle on feed for market at selected dates during the year, and of death losses and farm slaughter of different kinds of livestock.

Estimates of inventory numbers of livestock on farms are made in much the same way as estimates of crop acreages, discussed in an article "Crop Estimating—An Appraisal" in the May issue. The Federal agricultural census, taken every 5 years, presumably establishes the level of livestock numbers. Sample data of livestock on individual farms are used in determining the change in livestock numbers from year to year, or from the base (census) year to the current year.

THE accuracy of the annual estimates of actual numbers of livestock on farms depends upon (1) the completeness and accuracy of the Federal census enumerations of livestock numbers used as "periodic bench marks" by the Department in making annual estimates and (2) the adequacy and representativeness of the sample data used in estimating year-to-year changes in numbers of livestock on farms. However, the estimates of *annual change* may be accurate even though the absolute numbers may be in error because of inaccuracies in the census base.

The two major sources of inadequacy in census data relating to numbers of livestock on farms are *incompleteness* and *lack of comparability* from one

census to the next. The enumerator may fail to obtain a record from all the farms within his district or he may not ask all the questions on the schedule.

The farmer may be unable to answer the questions correctly or may refuse to do so. Lack of comparability is caused, in part, by changes in the age and sex classifications used in the schedule from one census to the next, but largely by changes in the date when the census is taken (a census taken in April or June is of limited value as a periodic bench mark in estimating inventory numbers of livestock as of January 1).

The importance of having the Federal census taken each time as of January 1 cannot be over-emphasized from the standpoint of furnishing a dependable basis for estimates of livestock numbers on farms.

THE problems in sampling livestock numbers on farms are somewhat different and in some respects more difficult than the problems in sampling crop acreages. Farm-to-farm, as well as year-to-year variability in numbers of some kinds of livestock on farms is as high as for crop acreages. For chickens and turkeys the variability is extremely high.

A livestock sample of individual farms obtained from voluntary correspondents is usually less representative of all kinds of farms than is the crop acreage sample. The December rural carrier livestock survey of individual farms is used in making estimates of year-to-year change in livestock numbers, rather than returns from regular crop reporters. The farms covered by the rural carriers are usually more representative than the farms of the regular crop correspondents.

METHODS used in estimating annual production of the different kinds of livestock have much in com-

mon with the methods used in estimating the annual production of crops. The numbers of breeding stock—sows, cows, and ewes—correspond to the acreages in the various crops. The number of young raised per female of producing age—pigs per litter, lambs per ewe—is similar to the yield per acre. The variability of data on pigs per litter, for example, is much less than that of sows per farm.

As is the case with the production of some crops and with crop acreages in some States, there is also information available from other and independent sources that can be used to check estimates of livestock numbers or of livestock production. In nearly all of the important livestock States annual figures of the number of different species returned for assessment are available. These, when adjusted for marketings and other disappearance between January 1 and the assessment date, give quite useful indications as to changes in numbers from year to year in most States. In some States the assessors also make annual enumerations (not assessments) of spring sows and milk cows and other livestock items.

FAIRLY complete records of the number of head of different species of livestock marketed each month are available for most of the important livestock States. These are based upon reports received from stockyards, packers, railroads, and brand and sanitary inspection services. Seasonal records of such marketings are used to check estimates of pig and lamb crops, and of cattle and lambs on feed. Total yearly marketings are used in making estimates of the amount and value of production and income from livestock.

Estimating annual wool production—the wool clip—also is similar to estimating the production of a crop. The number of sheep shorn and the pounds of wool per sheep—the weight of the fleece—are estimated separately. The variability of data concerning weight per fleece is not high since nature establishes rather definite limits to variability for such data. Records

of the total quantity of wool shipped from different areas are helpful in checking estimates of wool production.

THE problems that arise in estimating the number of eggs or the pounds of milk produced either monthly or annually tax the ingenuity and resourcefulness of livestock statisticians to the utmost. Not even fairly reliable periodic bench marks are available to establish the level of annual production for eggs or milk. The Federal census does ask for the number of eggs and the quantity of milk produced during the previous year but the results obtained, even after being adjusted as much as possible for incompleteness, can be used only as a minimum indication of the level of production.

A careful appraisal of various surveys giving information as to the consumption of eggs indicates that the level of production shown by the census has been anywhere from 15 to more than 30 percent below the number of eggs probably consumed in the United States. Furthermore, the amount of understatement on the part of the census varies with the time of year when the census is taken, being less with a spring census taken when current egg production is high, and more with a winter census taken when egg production is low. There is both memory bias and incompleteness in the census data.

FEW farmers are in position to give (to the census enumerator or in reply to a mailed questionnaire) the total number of eggs or of milk produced over a period of time as long as an entire year, because few of them keep such records. Many farmers are unable to give a credible reply to such a question. Enumerators knowing this tend to make their own guesses for the farmer. It is much better to phrase the inquiry in terms of the number of laying hens or cows milked, and eggs and milk produced in one day—*yesterday*—or during the week previous to the time of the inquiry.

A rate of production for eggs and milk for one day is obtained monthly from the regular crop correspondents of the Department. This is used in conjunction with estimates of number of laying hens and numbers of cows milked in making estimates of the production of eggs and milk. These monthly data show the pronounced seasonal pattern of the rate of production of eggs and milk.

The size of the sample is adequate since the variability in the rate of production is small in comparison with that of acreages or numbers of livestock. Again nature establishes limits to the variability.

The chief source of concern from the standpoint of obtaining reliable samples of the rate of egg and milk production as a basis for computing total production is the lack of representativeness of records from the farms of crop correspondents. Estimating total egg or milk production differs from estimating crop production or livestock production in that it is necessary to estimate a production that is in the form of finished products produced every day in the year, but from a plant that varies in size and in rate of output. The total production is the sum of these daily, weekly, or monthly outputs.

THE problem of estimating numbers of chickens or turkeys raised each year offers even greater difficulties than the problem of estimating egg or milk production or the numbers of chickens and turkeys on farms at any given time. Chickens are considered as "raised" whether sold as broilers at a few weeks of age or kept until mature. The chickens raised may be either farm hatched or purchased as day-old chicks from commercial hatcheries.

The census data on number of

chickens raised appear to be at least 10 to 20 percent incomplete when checked against available data on the consumption of chickens. Farmers from whom information concerning poultry raised is obtained are not fully representative of all kinds of farms having poultry. The great variability in numbers of chickens or turkeys per farm and number of chickens raised per farm makes it extremely difficult to obtain a sample of adequate size.

What is needed in making reliable estimates of milk and egg production monthly and of chickens produced is a well planned sample census or enumerative sample of representative farms to be taken *each month* throughout the year.

ONE other feature of the livestock reports that might well be mentioned is the intentions reports, which give farmers' reported plans as to future operations and make possible forecasts of the direction and probable extent of production changes or market supplies. Among these are breeding intentions for spring and fall farrowing of sows, intentions as to hatchings or purchases of baby chicks, numbers of heifer calves to be kept for milk cows, months when cattle on feed will be marketed.

Reports from farmers as to their intentions to breed sows for farrowing in the following farrowing season (spring or fall) have been obtained for more than 15 years. Forecasts as to probable farrowings, based upon these reports, have been made for 8 or 9 years. In general, these intention reports have been rather dependable indications of the direction of changes in farrowings, and in most years of the extent of the changes. They have given individual hog producers information needed for making adjustments in their breeding operations.

C. F. SARLE.

Farmers' short term debts on account of personal and collateral loans exceeded 1.2 billion dollars on December 31 last—BAE. Loans by commercial banks increased during the last half of 1938. Loans by federally sponsored credit agencies declined.

Tobacco Inspection for 1939

SERVICES under the Tobacco Inspection Act will be expanded to provide Federal inspection and grade certification for additional markets this season. Inspections during the marketing year for the 1939 tobacco crops seem likely to be in the neighborhood of 500 million pounds compared with approximately 250 million pounds handled under the Act during the marketing season for last year's crops.

Favorable action by approximately 87 percent of the growers voting in recent referendums for the Adel, Nashville, and Douglas markets in Georgia assured designation of these markets for the free and mandatory tobacco inspection. As this is written—in late June—growers who sell on the Greenville, N. C., market are voting on proposals to designate that market for the service. Several additional referendums are contemplated for the next few months.

DESIGNATION of the three flue-cured markets in Georgia has brought the number of designated markets to a total of 37. Favorable action in the Greenville referendum would increase this to 38 and add some 50 to 70 million pounds to inspections for the coming year. Greenville is one of the largest tobacco markets in the United States and the largest for which a referendum has been announced.

Included in the markets designated to date for the free and mandatory inspection and market news service are the South Carolina markets at Lake City, Darlington, and Pamlico.

In 1936, growers patronizing these South Carolina markets voted in favor of mandatory inspection but the service was withheld under an injunction granted on the day inspections were to have been inaugurated. The Supreme Court has since upheld the constitutionality of the Tobacco Inspection Act of 1935, however, and on April 27 the District Court of the Eastern District of South Carolina dismissed the original action affecting these three South Carolina markets.

The markets which to date have been designated include all of the markets for the four fire-cured types with the exception of two small receiving points where sales are held one day each week. The other designated markets represent a scattering of Burley flue-cured and dark air-cured sales points.

TOBACCO holds a unique position among the commodities for which the Department of Agriculture provides inspection services, in that it is the only farm product singled out by Congress for free service. The reasoning behind this is based upon the tax on the sale of manufactured tobacco products. This tax furnishes the Federal Government one of its most important sources of internal revenue. During the fiscal year now coming to a close, collections from this source probably will total close to 575 million dollars. Because of this tax contribution by tobacco the inspection service is made available without cost to tobacco growers.

C. E. GAGE.

Cotton Classing and Market News

FACILITIES have been set up for the classification of cotton from the 1939 crop, authorized by Congress

in the Grade and Staple Estimates Act. Free classification of cotton will be provided cotton growers in

1,000 "improvement" communities this season. In these communities groups of farmers have organized to improve the quality of their cotton. Market news service also will be provided, consisting of market supply and demand conditions and price quotations for the various grades and staple lengths of cotton.

Earlier this year, reports from county agents and other agricultural workers indicated that 900 to 1,000 organized groups of producers may apply for the free classing and market news services this season. Last year 312 groups were approved to receive these services. To facilitate planning for the expected increase in volume of classing, the Agricultural Marketing Service has specified that applications must be filed before September 1.

Applications can be filed only after the members of a group have completed planting.

The arrangements provide that groups send samples from all ginnings of their approved varieties to the nearest field classing stations of the Service. Samples will be classed for grade and staple length at no cost to growers, and reports of the class for each bale returned to growers and to group representatives.

Reports from the various groups indicate greatly increased interest in the market news feature this season. The Government, on its part, is making special efforts to provide detailed market news so that each group will have a better basis for quoting local price differentials to its members.

W. B. LANHAM.

Broilers The Year Round

A COMPARATIVELY recent development in the poultry industry is the extremely rapid growth in the commercial production of broilers. In the early days before poultry and eggs were produced commercially to any considerable extent, the majority of broilers were cockerels from general farm flocks marketed principally in the late spring and the summer months. Such cockerels were a byproduct of the production of pullets to replace layers in the farm flocks. Now, commercially produced broilers are available the year round.

Cockerels from the early hatches usually brought good prices but, as the season advanced and the quantity of broilers increased, prices dropped rapidly. With the development of commercial egg farms, a second source of supply appeared. Here again, surplus cockerels produced as a byproduct in the production of pullets were marketed as broilers. Since the majority of such broilers are leghorns, they are not so desirable from a meat standpoint as those produced on gen-

eral farms which are of the heavier breed type.

THE difference in market preference of these two classes of broilers is reflected by the premiums paid in most markets for broilers of the heavier type. As exclusively commercial egg farms increased, the number of leghorn broilers placed on the market increased correspondingly. The recent innovation of chick sexing, however, has tended to diminish the number of broilers marketed from this source.

The third source of supply is cockerels and pullets produced commercially as winter broilers and marketed during the winter months in advance of the normal broiler season. Although fall and winter broilers have been produced commercially for a number of years, it was not until the early 1920's that there was any real expansion in this branch of the industry.

One factor which has contributed substantially to the growth of the commercial-broiler industry has been an increasing tendency for urban con-

sumers to dine out in hotels and restaurants. The broiler lends itself very well to serving in restaurants or hotels, inasmuch as it is small enough to be served conveniently as a half-chicken and it fulfills the luxury requirements which many consumers demand when dining out.

THE commercial-broiler industry has attained its greatest growth and development in an area known as the Del-Mar-Va Peninsula. In a survey made by the University of Maryland in the fall of 1935, it was estimated that this area located in Delaware, Maryland, and Virginia produced approximately two-thirds of the total national production of commercial broilers. Production in this area was estimated at 11 million birds. Other important commercial-broiler areas are in New England, California, Georgia, Pennsylvania, Indiana, and Arkansas.

Before the advent of commercial-broiler production, broilers on the New York market during parts of March and April were sold at twice, and sometimes three times, the price of fowl. In recent years there has been a marked tendency for broiler prices to approach those of other classes of poultry, and broilers have lost most of their favored price position.

Agricultural specialists have been warning of the dangers of overexpansion in the commercial-broiler industry. Nevertheless production continues to increase and broiler prices have become less favorable to producers in relation to prices for other types of poultry.

Recent reports indicate that the industry is approaching the point of unprofitable production. It is likely that some contraction in production may soon be necessary.

J. H. RADABAUGH.

Industrial Recovery Resumed?

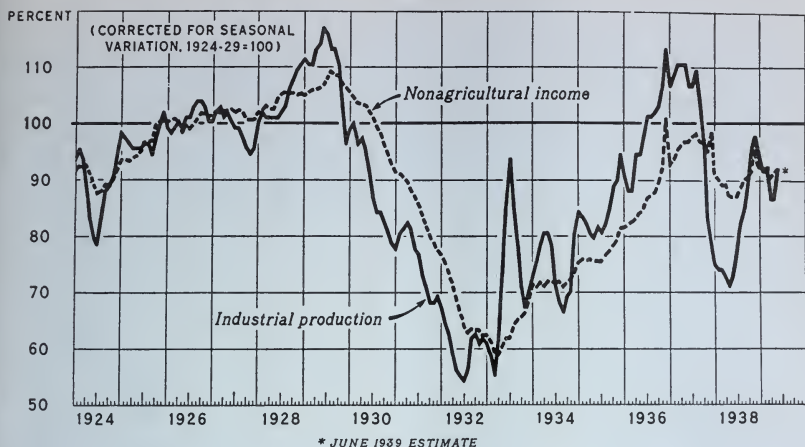
FOLLOWING 5 months of irregular recession from December to May industrial production recovered sharply in June. The June gain was due in some degree to the abnormally low level of activity during the first half of May incident to the bituminous coal strike. Additional factors of importance in the recovery, however, include a substantial contraseasonal gain in steel mill operations, less than the normal June contraction in automobile assembly and the maintenance of a high rate of construction activity. Though the turnabout in industrial activity occurred during May it came too late in the month to affect the Federal Reserve Board monthly index of industrial production which remained at 92—the same as in April. The index was 104 last December. Indications are that it was about 98 in June.

The rather sharp drop in nonagricultural income in April, due largely

to effects of the bituminous coal strike, was in part canceled by a greater than seasonal gain in May; no doubt the June figures will disclose further improvement. Nonagricultural income for the first half of 1939 is estimated at 30.5 billion dollars as compared with 29.6 and 30.2 billion dollars in the first and last halves respectively of the preceding year. It is thus apparent that consumer purchasing power was little affected by the temporary January-to-May recession in industrial production which interrupted the dynamic recovery of the final half of last year. As a consequence of the maintenance of the improved level of consumer income, distribution has continued at a sufficiently high rate to permit further liquidation of inventories.

Recovery in industrial production of the magnitude of that which occurred between June and December of 1938 (during which period the Fed-

MONTHLY INDEXES OF INDUSTRIAL PRODUCTION AND OF NONAGRICULTURAL INCOME, 1924-39



eral Reserve Board index rose from 77 percent of the 1923-25 average to 104) is not expected; but the relapse which interrupted the recovery movement appears to be over and moderate improvement for several months seems a reasonable expectation. Since an upward trend in nonagricultural em-

ployment, income, and purchasing power will be associated with expansion in business volumes the prospects are for an improved demand for farm products during the final half of 1939 as compared with that of the 6 months just ended.

P. H. BOLLINGER.

Measures of Domestic Demand

[1924-29=100]

	May				Percent change		
	1929	1933	1938	1939	1938-39	1933-39	1929-39
National income	106.3	58.5	86.2	89.6	+4	+53	-16
Nonagricultural income:							
Total	107.2	60.6	87.5	91.1	+4	+50	-15
Per capita	102.4	56.1	77.6	80.3	+3	+43	-22
Factory pay rolls:							
Total	110.2	42.7	70.2	81.3	+16	+90	-26
Per employed wage earner	103.9	63.9	84.3	90.4	+7	+41	-13
Industrial production:							
Total	114.2	73.0	71.1	86.1	+21	+18	-25
Factories processing farm products	108.2	105.4	87.3	102.9	+18	-2	-5
Other factory production	118.4	55.4	60.9	77.0	+26	+39	-35
Construction activity:							
Contracts awarded, total	100.0	13.2	42.1	50.4	+20	+282	-50
Contracts awarded, residential	86.9	9.9	33.1	49.3	+49	+398	-43
Employment in production of building materials	94.3	34.5	54.7	59.4	+9	+72	-37
Cost of living:							
Food	98.6	60.2	76.2	73.7	-3	+22	-25
All other items	97.7	80.3	85.9	85.7	(¹)	+7	-12
Purchasing power of nonagricultural income per capita:							
For food	103.9	93.2	101.8	109.0	+7	+17	+5
For all other items	104.8	69.9	90.3	93.7	+4	+34	-11

¹ Less than ½ of 1 percent.

NOTE.—All indexes adjusted for seasonal variation except "Cost of living."

General Trend of Prices and Wages

[1910-14=100]

Year and month	Whole-sale prices of all commodities ¹	Industrial wages ²	Prices paid by farmers for commodities used in ³			Farm wages	Taxes ⁴
			Living	Production	Living and production		
1920.....	225	222	222	174	201	242	244
1921.....	142	203	161	141	152	155	259
1922.....	141	197	156	139	149	151	261
1923.....	147	214	160	141	152	169	266
1924.....	143	218	159	143	152	173	265
1925.....	151	223	164	147	157	176	270
1926.....	146	229	162	146	155	179	271
1927.....	139	231	159	145	153	179	277
1928.....	141	232	160	148	155	179	279
1929.....	139	236	158	147	153	180	281
1930.....	126	227	148	140	145	167	277
1931.....	107	208	126	122	124	130	253
1932.....	95	179	108	107	107	96	219
1933.....	96	172	109	108	109	85	187
1934.....	109	183	122	125	123	95	178
1935.....	117	192	124	126	125	103	180
1936.....	118	200	122	126	124	111	182
1937.....	126	215	128	135	130	126	187
1938.....	115	207	122	124	122	124	-----
1938—May.....	114	201	-----	-----	125	-----	-----
June.....	114	202	122	126	124	-----	-----
July.....	115	205	-----	-----	123	129	-----
August.....	114	209	-----	-----	122	-----	-----
September.....	114	214	121	122	121	-----	-----
October.....	113	212	-----	-----	121	126	-----
November.....	113	207	-----	-----	121	-----	-----
December.....	112	212	120	122	120	-----	-----
1939—January.....	112	211	-----	-----	120	117	-----
February.....	112	213	-----	-----	120	-----	-----
March.....	112	218	119	122	120	-----	-----
April.....	111	211	-----	-----	120	121	-----
May.....	111	210	-----	-----	120	-----	-----

Year and month	Index of prices received by farmers [August 1909–July 1914=100]								Ratio of prices received to prices paid
	Grains	Cotton and cottonseed	Fruits	Truck crops	Meat animals	Dairy products	Chickens and eggs	All groups	
1920.....	232	248	191	-----	174	198	223	211	105
1921.....	112	101	157	-----	109	156	162	125	82
1922.....	106	156	174	-----	114	143	141	132	89
1923.....	113	216	137	-----	107	159	146	142	93
1924.....	129	212	125	150	110	149	149	143	94
1925.....	157	177	172	153	140	153	163	156	99
1926.....	131	122	138	143	147	152	159	145	94
1927.....	128	128	144	121	140	155	144	139	91
1928.....	130	152	176	159	151	153	153	149	96
1929.....	120	144	141	149	156	157	162	146	95
1930.....	100	102	162	140	133	137	129	126	87
1931.....	63	63	98	117	92	108	100	87	70
1932.....	44	47	82	102	63	83	82	65	61
1933.....	62	64	74	105	60	82	75	70	64
1934.....	93	99	100	103	68	95	89	90	73
1935.....	103	101	91	125	118	108	117	108	86
1936.....	108	100	100	111	121	119	115	114	92
1937.....	126	95	122	123	132	124	111	121	93
1938.....	74	70	73	101	114	109	108	95	78
1938—June.....	77	68	73	92	116	98	99	92	74
July.....	72	71	79	99	123	101	103	95	77
August.....	62	69	78	92	115	102	105	92	75
September.....	63	69	75	107	117	104	118	95	79
October.....	60	72	70	107	111	107	124	95	79
November.....	60	73	71	102	111	109	131	94	78
December.....	63	70	73	108	109	112	127	96	80
1939—January.....	66	71	76	96	112	109	97	94	78
February.....	66	70	78	108	116	107	91	92	77
March.....	66	71	81	114	116	100	88	91	76
April.....	67	70	82	102	114	95	87	89	74
May.....	72	72	85	110	112	92	85	90	75
June.....	73	73	93	105	107	94	83	89	74

¹ Bureau of Labor Statistics Index with 1926=100, divided by its 1910-14 average of 68.5.

² Average weekly earnings, New York State factories. June 1914=100.

³ These indexes are based on retail prices paid by farmers for commodities used in living and production reported quarterly for March, June, September, and December. The indexes for other months are interpolations between the successive quarterly indexes.

⁴ Index of farm real estate taxes, per acre, 1909-13=100.

⁵ Preliminary.